

10/092,211 filed 03/05/2002
Shuck, Gary L.
Reply to Final Office Action of November 29, 2005

REMARKS/ARGUMENTS

Claims 1 and 4–30 are pending in the above-captioned application, and all of these claims stand rejected. No new claim amendments are presented in this paper.

I. Claim rejections under 35 U.S.C. § 102(b) as being anticipated by Hasskamp (US 4537231)

Claims 1, 9–14, 18–20, and 23–28 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Hasskamp (US 4537231). This rejection is respectfully traversed. “[F]or anticipation under 35 U.S.C. § 102, a single reference must teach every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present.” MPEP § 706.02. “The identical invention must be shown in as complete detail as is contained in the . . . claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, USPQ2d 1913, 1920 (Fed. Cir. 1989).

With regard to independent claims 1 and 18, at a minimum, Hasskamp does not teach placing a microfluidic device in a vacuum chamber. Similarly, with regard to independent claim 23, Hasskamp does not teach a chamber configured to receive a microfluidic device, the chamber being fluidly coupled to a vacuum source.

Hasskamp teaches a vacuum chamber illustrated at 80 in Figures 3 and 4 and described in column 4, lines 16–18: “When connected to such a vacuum source, the manifold [74] becomes a main vacuum chamber 80....” No other vacuum chamber is mentioned by Hasskamp. Element 52 is identified by Hasskamp as a “die plate.” Column 3, line 33.

Vacuum chamber 80 provides means for “selectively moving each diaphragm portion 48 between a first position wherein it is disposed in a generally relaxed planar condition extending across the mouth 62 of its concavity 54 (FIG. 3), and a second position wherein it is in substantially full surface contact with the inner surface 64 of the concavity thereby increasing the volume of its upper chamber 50 by a fixed amount corresponding to the volume of the concavity.” Column 4, lines 3–11. Thus, pulling a vacuum on chamber 80 via vacuum line 79 causes diaphragm portions 48 to draw up and into concavities 54, which in turn draws a fluid (or fluids) into lower chambers 44 of disposable component 40. At no time is any device placed in chamber 80. Chamber 80 is not configured to receive a device, as the only openings into chamber 80 are port 78, which is connected either to a source of vacuum or to atmosphere, and passageways 82, which communicate with concavities 54. None of these openings is intended as an opening through which a microfluidic device may be introduced into chamber 80, nor is any of these openings suitable for introducing a microfluidic device into chamber 80.

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Further, with regard to independent claim 1, Hasskamp does not teach introducing a gas or fluid into the vacuum chamber "such that the microfluidic device is submerged in the gas or fluid." One of the objectives of the invention of Hasskamp is "the provision of an improved liquid dispenser system; the provision of such system which avoids contamination by the liquid except for one inexpensive, disposable component [40]." Column 2, lines 5-9. Passage of the liquid from disposable component 40 into chamber 80 is prevented by diaphragm portions 48. Clearly, Hasskamp does not intend for the liquid to flow into chamber 80, as this would contaminate the chamber with the liquid, eliminating any advantage provided by the disposable component.

Thus, Hasskamp does not teach every aspect of the claimed invention either explicitly or impliedly, nor does the reference show the identical invention claimed by Applicant in as complete detail as is contained in any of independent claims 1, 18, and 23. Withdrawal of the rejection of claims 1, 18, and 23 under U.S.C. § 102(b) as being anticipated by Hasskamp is, therefore, respectfully requested.

II. Claim rejections under 35 U.S.C. § 103(a) as being unpatentable over Hasskamp (US 4537231)

Claims 4-8 and 25-28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hasskamp (US 4537231). The rejection of these claims is respectfully traversed.

To warrant rejection under 35 U.S.C. § 103(a), all the claim limitations must be taught or suggested by the prior art. *See* MPEP § 2142. As has been demonstrated above, the Hasskamp reference neither teaches nor suggests all of the limitations of Applicant's independent claims 1 and 23. Thus, claims 1 and 23 are nonobvious. Claims 4-8 depend directly from independent claim 1. Claims 25-28 depend directly from independent claim 23. Any claim depending from a nonobvious claim is also nonobvious. *See* MPEP § 2143.03 and *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Therefore, dependent claims 4-8 and 25-28 are nonobvious. Withdrawal of the rejection of these claims as being unpatentable over Hasskamp is, therefore, respectfully requested.

III. Claim rejections under 35 U.S.C. § 103(a) as being unpatentable over Hasskamp (US 4537231) in view of Swedberg (US 5571410)

Claims 15-17, 21, 22, 29, and 30 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hasskamp (US 4537231) in view of Swedberg (US 5571410). The rejection of these claims is respectfully traversed.

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As has been demonstrated above, the Hasskamp reference neither teaches nor suggests all of the limitations of Applicant's independent claims 1, 18, and 23. The Swedberg reference does not cure the deficiency of teaching regarding the limitation(s). Thus, claims 1, 18, and 23 are nonobvious. Claims 15-17 depend either directly or indirectly from independent claim 1, claims 21 and 22 depend indirectly from independent claim 18, and claims 29 and 30 depend either directly or indirectly from independent claim 23. As any claim depending from a nonobvious claim is also nonobvious, dependent claims 15-17, 21, 22, 29, and 30 are nonobvious. Withdrawal of the rejection of these claims as being unpatentable over Hasskamp in view of Swedberg is, therefore, respectfully requested.

Conclusion

For the foregoing reasons, Applicant believes all the pending claims are in condition for allowance and should be passed to issue. If the Examiner feels that a telephone conference would in any way expedite the prosecution of the application, please do not hesitate to call the undersigned attorney.

Respectfully submitted,



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Signed: Ann C. Petersen